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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,057	02/03/2004	Gregory E. Conner	GEC-001-2US	1518

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EXAMINER

ALSTRUM ACEVEDO, JAMES HENRY

ART UNIT	PAPER NUMBER
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1616

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/771,057

Applicant(s)

CONNER, GREGORY E.

Examiner

James H. Alstrum-Acevedo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 18-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-20 are pending.

Specification

The incorporation of essential material in the specification by reference to an unpublished U.S. application, foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference, if the material is relied upon to overcome any objection, rejection, or other requirement imposed by the Office. The amendment must be accompanied by a statement executed by the applicant, or a practitioner representing the applicant, stating that the material being inserted is the material previously incorporated by reference and that the amendment contains no new matter. 37 CFR 1.57(f).

The disclosure is objected to because of the following informalities: the author name listed on page 1 of the specification for the book entitled, "Cystic Fibrosis" is incorrect, and should read "Hodson et al." instead of Margaret et al.

Appropriate correction is required.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claims 18 and 20 are objected to because of the following informalities: it is respectfully suggested that the word "in" be removed from line 4 of said claim; the word "anti-viral" is misspelled in claim 20, line 2 as "anti-vial." Appropriate correction is required.

The use of the trademarks TOBI[®] (pg. 13, lines 1, 5, and 8; and pg. 23, line 4) and PULMOZYME[®] (pg. 23, line 4) have been noted in this application. Trademarks **should be capitalized wherever they appear** and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner, which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 4, 6-8, 13, and 15-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131

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USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claims 4, 6, 8, 13, 15, and 17 recite the broad recitations bacterium (claims 4 and 13); lung condition (claims 6 and 15); enzyme (claims 8 and 17); airway clearance technique (claim 8), and the claims also recite “including *Staphylococcus aureus*, *Pseudomonas aeruginosa*, or *Burkholderia cepacia* (claims 4 and 13); “including a lung infection or cystic fibrosis” (claims 8 and 15), “including depolymerase” (claims 8 and 17), and “including breathing exercises, postural drainage, chest percussion, vibration, or assisted coughing” (claims 8 and 17), which is the narrower statement of the range/limitation.

Claim 7 recites the limitation "said additional treatment" in line 1. There is insufficient antecedent basis for this limitation in the claim. Claim 7 depends from claim 6, which recites “a treatment,” but does not recite an “additional treatment.”

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Applicant Claims

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2. Determining the scope and contents of the prior art.
3. Ascertaining the differences between the prior art and the claims at issue; and resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiter et al. (Nonspecific Bacterial Activity of the Lactoperoxidase-Thiocyanate-Hydrogen Peroxide System of Milk Against Escherichia coli and Some Gram-Negative Pathogens," *Infection and Immunity*, March 1976, pp 800-807) in view of *Harrison's Principles of Internal Medicine*, vol. 2, McGraw-Hill: New York, 1994, pp 1176 (Reference is part of the prosecution history of the parent application, which is now U.S. Patent No. 6,702,998) ("Harrison's").

Applicant Claims

Applicant recites a method of treating a lung condition in a primate comprising administration to the respiratory system of said primate an effective amount of hydrogen peroxide, wherein the lung condition may comprise infection with (a) bacteria, (b) fungus, or (c)

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virus and said method may further comprise the step of administering a peroxidase or thiocyanate in combination with H_2O_2 and an additional treatment comprising administration of an antibiotic, anti-fungal, or antiviral.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Reiter teaches that two strains of *Escherichia coli* and one strain each of *Salmonella typhimurium* and *Pseudomonas aeruginosa* were killed by the bactericidal activity of the lactoperoxidase-thiocyanate-hydrogen peroxide (LPThioHP) system in milk and in a synthetic medium. In the LPThioHP system, hydrogen peroxide was supplied exogenously by glucose oxidase (abstract). Reiter states that the inhibitory effect of the LPThioHP system in milk, saliva, and other biological secretions was amply confirmed by independent investigations by Klebanoff and coworkers using *Lactobacillus acidophilus*, *Streptococcus faecalis*, *Staphylococcus albus*, *Escherichia coli*, and *Bacillus megatherium* as test organisms (p 800, 3rd paragraph left hand column). Figures 1, 3, 5, and 8 on pages 801, 802, 803, and 805 demonstrate the bactericidal effect of the LPThioHP system.

The following prior art reference teachings are being provided to show that the LPThioHP system has antiviral properties as well. Bollen et al. (U.S. Patent No. 5,503,853) (cited in parent application) teach prophylactic and therapeutic applications of peroxidases for the manufacture of medicaments for the treatment and prevention and treatment of enveloped virus infections and, in particular, of herpes simplex and immunodeficiency virus infections. The medicaments include a peroxidase, a substrate, and peroxide in a pharmaceutically acceptable carrier. Peroxidases of the medicaments include lactoperoxidase

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and myeloperoxidase. The medicaments are formulated with a pharmaceutically acceptable carrier for topical, oral and injectable administration to individuals in need thereof (abstract). In Tables IA and IB Bollen teaches several different peroxidases (e.g. lactoperoxidase, salivary peroxidase, etc.) and their substrates (thiocyanate and iodide) and the reactions of the peroxidases of Table IA to produce either a hypohalite or hypothiocyanite compound, respectively. Both Salivary peroxidase and lactoperoxidase catalyze the interaction of thiocyanate and hydrogen peroxide to produce hypothiocyanite and water (Table IB). Bollen teaches that inorganic peroxides, organic peroxides, and even hydrogen peroxide may be utilized as the oxygen donor in the therapeutic peroxidase systems. Bollen's Examples VI-VIII demonstrate the antiviral effectiveness of his peroxidase/substrate/peroxide system against HIV (Example VI), enveloped virus (Example VII), and genital herpes (Example VIII).

Ascertainment of the Difference Between Scope the Prior Art and the Claims

(MPEP §2141.012)

Reiter lacks the teaching or suggestion of using the LPThioHP system in a method of treating a lung condition associated with cystic fibrosis. This deficiency is cured by the teachings of Harrison's.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Harrison's teaches that upper respiratory tract disease is almost universal in cystic fibrosis patients and the said patients exhibit sputum microbiology, including infection by *Haemophilus influenza*, *S. aureous*, *Pseudomonas aeruginosa*, *E. coli*, *P. cepacia*, *Klebsiella*,

Proteus, nontuberculous mycobacteria, and in some instances of *Mycobacterium tuberculosis* (pg. 1196, left hand column). After repeated exposure to antibiotics, *P. aeruginosa* is usually the predominant organism recovered from sputum and may be present in several strains with different antibiotic sensitivities. Harrison's teaches that the major objectives for cystic fibrosis therapy are to promote clearance of secretions, **control infection in the lung**, provide adequate nutrition, and prevent intestinal obstruction (pg. 1196, right hand column, "Treatment" section). The term "cystic fibrosis patients" reads on humans. Humans are primates and mammals.

***Finding of Prima Facie Obviousness Rational and Motivation
(MPEP §2142-2143)***

It would have been obvious to a person of ordinary skill in the art at the time of the instant invention to combine the teachings of Reiter and Harrison's, because Reiter teaches that the LPThioHP system has bactericidal activity against *Pseudomonas aeruginosa* and Harrison's teaches that a major objective of the treatment of cystic fibrosis patients is to control infections, including infection by *Pseudomonas aeruginosa*. It would have been obvious to a skilled artisan cognizant of the teachings of Reiter and Harrison's the one would want to administer Reiter's LPThioHP system to the respiratory system because it has bactericidal activity against *P. aeruginosa*, which is a species often associated with pulmonary infections of cystic fibrosis patients. A skilled artisan would have had a reasonable expectation of success upon combination of the prior art references, because Harrison teaches that *P. aeruginosa* is a dominant organism associated with the pulmonary infection and microbiology of cystic fibrosis patients and Reiter's LPThioHP system has demonstrated bactericidal activity against *P. aeruginosa*. It is noted that the LPThioHP system generates hydrogen peroxide, as evidenced by Reiter's Figure 2 in

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concentrations up to about 1.5 mM. Regarding the frequency of treatment, this is clearly a result specific parameter that a skilled artisan would routinely optimize to achieve the desired result. The optimization of parameters, such as treatment frequency, is a routine practice in the art. Thus, absent some demonstration of unexpected results from the claimed parameters, the optimization of treatment frequency would have been obvious at the time of applicant's invention.

Claims 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiter et al. (*Infection and Immunity*, March 1976, pp 800-807) in view of Harrison's *Principles of Internal Medicine*, vol. 2, McGraw-Hill: New York, 1994, pp 1176 ("Harrison's") as applied to claims 1-18 above, and further in view of Stutman, H. R. ("The General Approach to Cystic-Fibrosis Related Pulmonary Infection in the United States," In *Cystic Fibrosis Pulmonary Infections: Lessons from Around the World*, Birkhäuser Verlag: Boston, 1996, pp 106) (the Stutman reference is part of the prosecution history of the parent application, now U.S. Patent No. 6,702,998) ("Stutman").

Applicant Claims

Applicant recites a method of treating a lung condition in a primate comprising administration to the respiratory system of said primate an effective amount of hydrogen peroxide, wherein said administering is in combination with an additional treatment, such as an airway clearance technique.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Reiter and Harrison's have been set forth above. Stutman teaches that techniques for the clearance of pulmonary secretions in cystic fibrosis patients are practiced both for their beneficial mechanical effects as well as for the postulated enhancement of antibiotic penetration into less viscous secretions and include chest percussion, postural drainage, airway vibration, positive expiratory pressure (PEP), and other forced expiratory techniques (i.e. assisted coughing) (pg. 106 1st two sentences on page). These techniques have been traditionally used as part of an overall approach to the prevention and/or delay of chronic lung disease and progressive destruction of the airway in cystic fibrosis (pg. 106, 1st paragraph).

Ascertainment of the Difference Between Scope the Prior Art and the Claims

(MPEP §2141.012)

Reiter and Harrison's lack the teaching or suggestion of using an additional treatment comprising an airway clearance technique, including breathing exercises, postural drainage, chest percussion, vibration, or assisted coughing. This deficiency is cured by the teachings of Stutman.

Finding of Prima Facie Obviousness Rational and Motivation

(MPEP §2142-2143)

It would have been obvious to a person of ordinary skill in the art at the time of the instant invention to combine the teachings of Reiter and Harrison's with the teachings of Stutman, because airway clearance techniques have been traditionally used as part of an overall approach to the prevention and/or delay of chronic lung disease and progressive destruction of the airway in cystic fibrosis therapy. Using similar reasoning, a skilled artisan would have had a

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reasonable expectation of success upon combining the administration of Reiter's compositions to the respiratory system of a patient exhibiting symptoms of cystic fibrosis and suffering from a lung condition.

Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiter et al. (*Infection and Immunity*, March 1976, pp 800-807) in view of *Harrison's Principles of Internal Medicine*, vol. 2, McGraw-Hill: New York, 1994, pp 1176 ("Harrison's") as applied to claims 1-18 above in further view of Ponikau (U.S. Patent No. 6,207,703).

Applicant Claims

Applicant recites an inhaler comprising hydrogen peroxide, a peroxidase or thiocyanate and/or further comprising an antibiotic, antifungal, or antiviral.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Reiter and Harrison's have been set forth above. Ponikau teaches methods and materials involved in the treatment and prevention of non-invasive fungus-induced inflammation of mucosal tissue as well as asthma symptoms (title and abstract). Ponikau's invention is based on the discovery that most, if not all, chronic rhinosinusitis conditions have a fungal etiology and that most, if not all, cases of chronic rhinosinusitis can be treated by using an antifungal agent in an amount, at a frequency, and for a duration effective to reduce the presence of fungal organisms within nasal-paranasal mucus. In addition, using an antifungal agent in an amount, at a frequency, and for a duration effective to maintain a reduced

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level of fungal organisms within nasal-paranasal mucus can prevent chronic rhinosinusitis symptoms (col. 2, lines 32-41). Any individual that had a previous episode of rhinosinusitis is at risk for developing non-invasive fungus-induced rhinosinusitis. In addition, individuals having cystic fibrosis can be at risk for developing non-invasive fungus-induced rhinosinusitis (col. 18, lines 12-16). Ponikau's formulations may be delivered via direct mucoadministration to the nasal-paranasal anatomies including via nasal sprays and nasal inhalers. Devices suitable for direct mucoadministration include inhalers, canisters, spray cans, and nebulizers (col. 27, lines 31-36 and 43-46). Ponikau also teaches that his treatment methods and compositions may be used in combination with other treatments, including a second formulation, comprising antifungal agents, antibacterial agents, anti-inflammatories, etc. The second formulation may be delivered to a mammal by any route, including intranasal and intrabronchial (col. 29, lines 36-56).

Ascertainment of the Difference Between Scope the Prior Art and the Claims

(MPEP §2141.012)

Reiter and Harrison's lack the teaching of methods comprising the administration of an antifungal agent and inhalers comprising compositions for the treatment of lung conditions in mammals or primates exhibiting symptoms of cystic fibrosis. These deficiencies are cured by the teachings of Ponikau, set forth above.

Finding of Prima Facie Obviousness Rational and Motivation

(MPEP §2142-2143)

It would have been obvious to combine the teachings of Reiter, Harrison's, and Ponikau, because Harrison's teaches that the management of infection control is a major objective of

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cystic fibrosis treatment and Ponikau teaches that individuals with cystic fibrosis can be at risk for developing non-invasive fungus-induced rhinosinusitis. A skilled artisan would have been further motivated to combine the teachings of Ponikau with those of Reiter and Harrison's, because Ponikau teaches that compositions may be delivered to the respiratory system using inhalers (the nose provides one entry route to the respiratory system). Furthermore, it is art recognized that inhalers are suitable devices for the administration of therapeutic agents to the respiratory system. A skilled artisan would have had a reasonable expectation of success upon combination of the prior art references, because Ponikau teaches that the administration of a second formulation can be combined with his invented treatment methods, wherein administration includes delivery of the second formulation intranasally and/or intrabronchially. Therefore, it would have been apparent to a skilled artisan to obtain an inhaler comprising a therapeutic composition comprising (a) hydrogen peroxide, (b) a peroxidase or thiocyanate, and/or (c) an antibiotic, anti-fungal, or anti-viral.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting

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ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-18 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 6,702,998 (USPN '998).

Although the conflicting claims are not identical, they are not patentably distinct from each other because they are substantially overlapping in scope and mutually obvious. Both USPN '998 and the instant application recited methods of treating lung infections (i.e. lung conditions) in primates (i.e. mammals) suffering from cystic fibrosis comprising administration of thiocyanate, a peroxidase, and/or hydrogen peroxide. The specific infective bacteria listed in claim 4 of the instant application are also recited in claim 3 of USPN '998. Both the instant application and USPN '998 also recited the combination of other treatments including breathing exercises, postural drainage, chest percussion, vibration, or assisted coughing. Therefore the Examiner concludes that claims 1-18 are prima facie obvious over claims 1-17 of USPN '998.

Other Matter

Regarding the use of the word "including" in claims 6, 8, and 15, it is respectfully suggested that if Applicant intends to refer to a group from which a specific species may be selected that the word "included" is removed and replaced with wording, such as, "selected from a group consisting of [list the members of a given group, for example, "a lung condition selected from a group consisting of lung infection or cystic fibrosis"]].

Conclusion

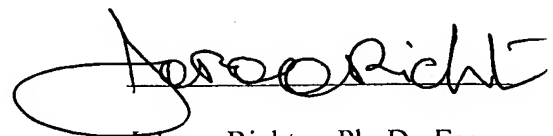
Claims 18 and 20 are objected. Claims 1-20 are rejected. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James H. Alstrum-Acevedo whose telephone number is (571) 272-5548. The examiner can normally be reached on M-F, 9:00-6:30, with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on (571) 272-0664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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